Purpose

This memorandum is to describe the request from the Region 3, Environmental Protection Agency (EPA), Hazardous Site Cleanup Division to the Water Resources U.S. Geological Survey (USGS), Water Resources Division, for assistance in determining the natural occurrence and range of several groundwater quality constituents including, but not limited to arsenic, manganese and sodium. The data for this survey is from the Dimock, Pennsylvania, area and includes approximately 60 groundwater supply wells.

Background

EPA is currently assessing the groundwater quality in an approximate 9 square mile area surrounding Dimock, Pennsylvania. A significant number of the groundwater samples have shown concentrations of substances such as arsenic, manganese, barium, lithium and sodium, that some might describe as brackish, that exceeds various water quality limits for safe consumption of water. The presence of this "brackish" groundwater has raised concerns that there may be a non-natural origin for these conditions.

In conducting a literature search regarding groundwater quality, several USGS papers discussing the presence of apparent "brackish" groundwaters in several regions of northern Pennsylvania, was found. One of the authors common to several of the papers, a Dennis J. Low P.G. USGS WRD, Limekiln Road, New Cumberland, Pennsylvania, office was contacted by Region 3.

Request

Region 3 EPA requests Dennis J. Low, of USGS WRD to examine the groundwater quality data and groundwater well information of approximately 60 homes in the Dimock area, provided by EPA and offer an informal opinion on the nature of the groundwater quality. In short, to answer the question: are the presence of arsenic, manganese and other brackish conditions consistent with other hydro-geologic settings in Pennsylvania. The overall level of effort for this review is anticipated to take less than 2 days. The results of this examination are expected to be communicated in an email and to briefly answer the question stated above.

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